

## Assessment Module 3 Electric Circuits

### Test your knowledge of Electric Circuits

1. The number of electrons that flow in a certain amount of time is the \_\_\_\_.
- Voltage
  - Work
  - Current
  - resistance

Answer: c Current is the flow of electrons per unit time.

Incorrect: a Voltage is the amount of work per charge not the rate of flow of electrons.

Incorrect: b Work is a force causing a displacement not the rate of flow for electrons.

Incorrect: d Is how hard it is to push electrons through a circuit not how fast they move.

2. According to Ohm's Law if the resistance increases the current \_\_\_\_\_.
- Increases
  - Decreases
  - Stays constant

Answer: b  $V = iR$  shows an indirect relationship between current and resistance.

Incorrect: a This would only be true if the resistance increased. This would make it harder for the electrons to flow.

Incorrect: c According to Ohm's Law  $V=iR$ . If the resistance changes so does the current.

3. In a series circuit the current has only one path to follow therefore the \_\_\_\_\_ remains the same.
- Voltage
  - Current
  - Resistance

Answer: b The current has nowhere else to go so it remains the same.

Incorrect: a If the current is the same then the voltage cannot be the same for objects in series.

Incorrect: c The resistance for objects in series maintain their original values.

4. A switch in a circuit \_\_\_\_\_.
- Opens and closes different paths for the electrons to follow.
  - Can be left open so that no current flows.
  - Can change the direction of the current.
  - All of the above.

Answer: d A switch performs all of these tasks.

Incorrect: a This is true, but what about the other answers?

Incorrect: b This is true, but what about the other answers?

Incorrect: c This is true, but what about the other answers?

5. The difference between a button and a switch is that a button\_\_\_\_\_.
- Cannot shut off the current.
  - Can change the direction of the current.
  - Can change which path the current follows.
  - None of the above

Answer: a A button has a normal state that is resumed when the button is not pushed.

Incorrect: b Both a button and switch can perform this function.

Incorrect: c Both a button and switch can perform this function.

Incorrect: d Try again. One of the answers is correct.

6. If the current flowing through a motor decreases then the motor spins \_\_\_\_\_.

- Faster
- Slower
- They same speed

Answer: b Current and the motor speed are directly related so this is true.

Incorrect: a Current and the motor speed are directly related so try again.

Incorrect: c If the current changes so does the motor speed, try again.